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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,704	11/07/2001	Bernd J.W. Mathiske	SUN-P6316-RSH	5646
22835	7590	01/12/2005	EXAMINER	
c/o A. RICHARD PARK, REG. NO. 41241 PARK, VAUGHAN & FLEMING LLP 2820 FIFTH STREET DAVIS, CA 95616			MANOSKEY, JOSEPH D	
			ART UNIT	PAPER NUMBER
			2113	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n No.

10/039,704

Applicant(s)

MATHISKE ET AL.

Examiner

Joseph Manoskey

Art Unit

2113

-- The MAILING DATE of this communication appears on th cover sheet with the correspond nc address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Litzkow et al., "Checkpoint and Migration of UNIX Processes in the Condor Distributed Processing System", hereinafter referred to as "Litzkow".

3. Referring to claims 1, 10, and 19, Litzkow teaches checkpointing using a library that is re-linked but not re-compiled to include this library, this is interpreted as pre-linking a library into the application during a run-time invocation of the application, wherein the run-time invocation occurs after the application has been compiled and linked (See page 1, section 1). Litzkow also teaches providing new versions of system calls to record information from the calls, this is interpreted as the library being an interceptor library (See page 5, section 3.4.1). Litzkow discloses new versions of calls that have the same as the calls by the application, thus intercept the function calls, and record the information, this is interpreted as intercepting the function calls and recording parameters to create a checkpoint (See page 5, section 3.4.1). The new functions then

call the actual routine, thus making the function call (See page 5, section 3.4.1). Finally the interception is done using new versions of the function calls they receive the return value of the actual function call and then return it, thus forwarding the result of the function call back to the application (See page 5, section 3.4.1).

4. Referring to claims 2, 11 and 20, Litzkow teaches the application being interrupted, this interpreted as stopping the application (See page 7, section 4). Litzkow also teaches the checkpoint being saved to stable storage using the file system, this is interpreted as retrieving the recorded parameters and saving the checkpoint data to secondary storage (See page 1, section 2). Finally the user code resumes where it left off, thus "resuming the application" (See page 7, section 4).

5. Referring to claims 3, 12, and 21, Litzkow discloses restoring the process's state, this is interpreted as using the checkpoint to restore the application (See page 2, section 2).

6. Referring to claims 4, 13, and 22, Litzkow teaches the checkpoints being stored in stable storage, this is interpreted as saving the checkpoint data to a persistent storage (See page 1, section 2).

7. Referring to claims 5, 14, and 23, Litzkow discloses saving the checkpoint data in stable storage using the file system, this is interpreted as saving the checkpoint data in a file system, or a database (See page 1, section 2).

8. Referring to claims 6, 15, and 24, Litzkow teaches using a "syscall()" to call the actual function, this is interpreted as making the function call involves referencing the function through a function pointer (See page 6, section 3.4.1).

9. Referring to claims 7, 16, and 25, Litzkow discloses saving the stack and data in the checkpoint file, this is interpreted as recording results of the function call to facilitate creating a checkpoint that includes information about the results of the function call (See page 7, section 4).

10. Referring to claims 8, 17, and 26, Litzkow teaches the function calls including system calls and library routines, "lib calls" (See page 5, section 3.4.1).

11. Referring to claims 9, 18, and 27, Litzkow teaches the checkpoint file containing pathname of the file (See page 7, section 3.4). Litzkow also discloses stack, data, and shared library information in the checkpoint, this is interpreted as thread flags and timer-thread relationships (See page 7, section 4).

### ***Response to Arguments***

12. Applicant's arguments, see page 8 of amendment, filed 18 October 2004, with respect to the Oath have been fully considered and are persuasive. The objection of the Oath has been withdrawn.

13. Applicant's arguments, see page 8 of amendment, filed 18 October 2004, with respect to claims 1, 10, and 19 have been fully considered and are persuasive. The objection of claims 1, 10, and 19 has been withdrawn.

14. Applicant's arguments, see page 8-9 of amendment, filed 18 October 2004, have been fully considered but they are not persuasive. The applicant states that the prior art teaches the static linking of checkpointing code with the user's code and the applicant's invention uses dynamic linking. The examiner respectfully disagrees. Litzkow teaches checkpointing using a library that is re-linked but not re-compiled to include this library, this is interpreted to mean that library is dynamically linked to the program since it is not occurring at compile time (See page 1, section 1). The examiner respectfully disagrees with the applicant's citing of Litzkow as having not implemented dynamic linking. Litzkow does not state that dynamic linking has been implemented, but rather the system has not been implemented in the C programming language (See page 8, first paragraph).


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Manoskey whose telephone number is (571) 272-3648. The examiner can normally be reached on Mon.-Fri. (7:30am to 4pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JDM  
January 4, 2005

  
ROBERT BEAUSOLIEL  
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